

REMARKS

Claims 1-9 are pending. Claims 1-4 have been amended to more clearly reflect the claimed invention. Support for the amendment on claims 1-4 can be found in the original claims. Claims 5-9 are new. Support for claims 5-9 can be found in the specification on page 7, lines 15-19 and Tables 1-4. No new matter has been added.

Rejection under 35 U.S.C. § 112, second paragraph

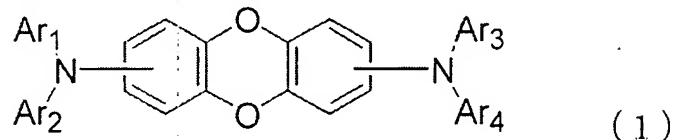
The Examiner has rejected claims 1-4 under 35 U.S.C. § 112, second paragraph, as being indefinite for reciting the term "derivative".

In response to the rejection, claims 1-4 have been amended replacing the term "derivative" with "compound". The term "compound" was recommended by the Examiner.

Issues Under 35 U.S.C. § 103(a) Obviousness

Claims 1-4 stand rejected under 35 U.S.C. § 103(a) as being obvious over Janietz *et al.* and/or Niume *et al.*

The present invention is drawn to an aminodibenzodioxin compound and an organic electroluminescent element comprising the aminodibenzodioxin compound represented by general formula (1);



Applicants contend that the compounds of this invention are a diamine which has two diaryl amino groups. -Nar₁Ar₂ or NAr₃Ar₄ of the general formula (1) will be referred to hereafter as -Nar₂, since Ar₁, Ar₂, Ar₃ and Ar₄ have the same description (to assist with simplifying the comparative arguments).

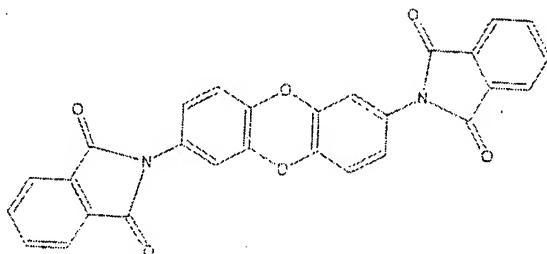
The Examiner is directed to the fact that the NAr₂-N is directly bonded with the aromatic ring of the Aryl group (Ar). Therefore, NAr₂ form a nitrogen-containing heterocyclic ring. It is necessary for the above-mentioned heterocyclic ring to be condensed with the other aryl ring, in view of the N atom bonded with the two Ar, thus the N atom forms the heterocyclic ring.

In the case of the NAr₂ being N-carbazolyl, N-phenoxydinyl, N-phenoxythiazinyl or N-β-carbolinyl, the N atom forms the heterocyclic ring and furthermore, the N atom is bonded with the two benzene rings. These two benzene rings are aromatic rings (Aryl groups). Though the N atom forms a heterocyclic ring, it is also bonded with two neighboring aryl rings directly.

In contrast, the compounds disclosed in Janietz *et al.* and Niume *et al.* are drawn to polyimides (as indicated in their titles and abstracts). Applicants contend that a polyimide chain is different than a nitrogen-containing heterocyclic ring. These compounds will have different properties and are not considered to be functional equivalents or analogs.

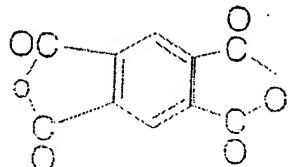
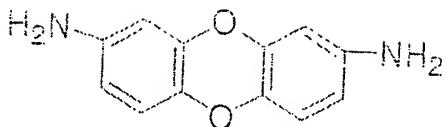
Janietz *et al.* merely teach unit A and Niume *et al.* merely teach unit B.

Unit B has the following structure:



This polymide is obtained by, for example, reacting 2,7-diamino-dibenzodioxine with pyromellitic dianhydride.

The polyimide which has Unit A is obtained by reacting 2,7-diamino-dibenzodioxine with benzophenone tetracarboxylic acid dianhydride.



The Examiner is directed to the N atom of Units A and B of polyimide, wherein the N atom forms an amide ring. This amide ring condenses with the benzene ring and the N atom is bonded with the benzene ring through the CO reactive group. Thus, the N atom is not bonded with the two aryl groups directly. Moreover the N atom taught in both of these references does not combine with the two aryl groups as claimed.

Therefore it would not have been obvious in view of Janietz *et al.* and/or Niume *et al.* disclosing Units A and B of a polyimide to achieve the claimed aminodibenzodioxin compound. There is no reason why skilled artisan would have considered modifying a polyimide to arrive at the claimed NAr₂-N complex, directly bonded with the aromatic ring of the Aryl group (Ar).

The claimed compounds of this invention have the feature of performing as an organic electroluminescent element (OEL) material by having two diaryl amino groups or the equivalent. Units A and B cannot be used as an OEL material because they do not have such an amino group linked. In addition, it is well known in the art that a pyridine, quinoline and carbazole are regarded as a type of amine, having the same properties with amines.

The polyimide described in both Janietz *et al.* and Niume *et al.* cannot be subjected to the synthesis method of this specification, the compound of this invention requires the method of manufacture as described in the synthetic example of this specification. Because polyimides do not have the same structure or properties of the claimed aminodibenzodioxin compound wherein one NAr₂-N is directly bonded with the aromatic ring of the Aryl group, this invention is not obvious. The Examiner has provided no reason why skilled artisan would have considered modifying the polyimide of the prior art cited, having different properties combined with the unpredictability of polyimides properties verse a diamine which has two diaryl amino groups to

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arrive at the claimed aminodibenzodioxin compound. In other words, the compound of this invention is a diaryl amine that is known as an OEL material; polyimides do not have these properties.

Accordingly, a person skilled in the art could not achieve the present invention based on Janietz *et al.* and Niume *et al.*

Reconsideration and withdrawal of the obviousness rejection of claims 1-4 are respectfully requested.

CONCLUSION

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Eggerton Campbell Reg. No. 51307 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

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